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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/960,699	09/24/2001	Lee Daniel Feinberg	033337/0124	4270
22428	7590	07/22/2004	EXAMINER	
FOLEY AND LARDNER SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			NGUYEN, CHAU M	
			ART UNIT	PAPER NUMBER
			2633	8

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/960,699

Applicant(s)

FEINBERG ET AL.

Examiner

Chau M Nguyen

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 September 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The illustration of figure 8 and page 13 paragraph [0063], lines 6-11, depict the "eye" diagram. In the Brief Description Of The Drawings Section, page 7, paragraph [0024], discloses "... a block diagram of a second exemplary embodiment..."

It is unclear and confusing. Appropriate correction is required.

2. Again, in the Brief Description Of The Drawings Section, paragraphs [0028] and [0030] relate to figures 12 and 14, respectively. Both indicate the same "...block diagram of a sixth embodiment...". It is not clear.

Similarly, paragraphs [0029] and [0031] relate to figures 13 and 15, respectively. Both indicate the same "...block diagram of a seventh exemplary embodiment...".

It is unclear and confusing.

Appropriate correction is required.

Double Patenting

3. Claims 1, 3, 4, 7-10, 14, 16-19 and 22-25 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 3, 5, 6, 14, 16-17 and 19-21 of copending Patent Application No. 09/960,722 (Hereinafter "Application 722"). Although the conflicting claims are not identical, they are not patentably distinct from each other because:

As claims 1, 16 and 23, Application 722' discloses (see claim 20 of 722'):

a first optical fiber having a first end and a second end, the optical fiber ends being terminated at the first end and the second end (claim 20, lines 1-4);

a plurality of line units optically coupled to the first optical fiber for amplification of a WDM optical signal propagating along the first optical fiber (claim 20, lines 5-6); and

a power cable for the line units (claim 20, line 10);

wherein at least one end of the power cable is terminated between the first end and the second end of the first optical fiber (claim 20, lines 11-12).

As claims 3 and 17, Application 722' discloses the first power cable length is less than the total length of the first optical fiber (claim 14).

As claim 4, Application 722' discloses the first power cable is terminated at about a midpoint of the first optical fiber (claim 3).

As claim 7, Application 722' discloses the first and second power cables provide at least 10,000 watts of total power to the line units (claim 5).

As claim 8, Application 722' discloses the first optical fiber is at least 9000 km in length (claim 6).

As claims 9 and 18, Application 722' discloses the step (claim 16) for monitoring optical signal quality of the optical signal propagating along the first optical fiber at a site of power termination. 722' does not clearly show an optical tap. However, it would have been

obvious to one having ordinary skill to provide an optical device such as an optical tap to collect or extract some portion of signal for monitoring purpose. This supporting rationale is based on a recognition as a result of attempt by applicant to solve an unknown problem but merely amount to involves only routine skill in the art.

As claims 10 and 19, Application 722' discloses the step (claim 17) for adjusting a gain profile of the optical signal propagating along the first optical fiber at a site of power termination. Application 722' does not clearly show a gain correction filter. However, it would have been obvious to one having ordinary skill to provide an optical device such as an gain correction filter to adjust the gain profile of signal. This supporting rationale is based on a recognition as a result of attempt by applicant to solve an unknown problem but merely amount to involves only routine skill in the art.

As claims 14, 22 and 25, Application 722' (claim 19) discloses the line units comprising Raman amplifiers.

As claim 24, Application 722' (claim 21) shows the power able to provide at least 10,000 watts of power to the line units.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-8, 14-17 and 22-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Spagnoletti et al. (Hereinafter "Spagnoletti") (U.S. Pat. No. 6,496,626 B2).

As claims 1, 16 and 23, Spagnoletti discloses a wave division multiplexed (WDM) optical communication system propagating along an optical fiber (figs. 4 and 5) comprising:

a first optical fiber having a first end (at 10) and a second end (at 20) (col. 2, lines 57-58);

a plurality of repeater (line units) (30) (col. 5, line 15) optically coupled to the first optical fiber for amplification of a WDM optical signal propagating along the first optical fiber (col. 5, lines 47-59); and

a power cable adjacent to the optical fiber (such as line drawn from 50 to 30, see fig. 4) having a first end (at 50) and second end (at 30) for the line units and providing power to the lines units (col. 5, line 24-25);

wherein at least one end (end at 30) of the power cable is terminated between the first end (end at 10) and the second end (end at 20) of the first optical fiber (see fig. 4, col. 35-57).

As claim 2, the system of Spagnoletti further comprising:

a second power cable (line drawn from 30 to 60) having a first end (at 30) and a second end (at 60),

wherein a first end (at 50) of the first power cable (from 50 to 30) is located at a position proximate to the first end (end 10) of the first optical fiber and a second end of the first power cable (at 30) is terminated at a termination site (30) between the first end of the first optical fiber (end 10) and the second end of the first optical fiber (end 20), and

wherein the first end (at 30) of the second power cable (from 30 to 60) is terminated at the termination site (30) and the second end (at 60) of the second power is located at a position proximate to the second end of the first optical fiber (end 20).

As claims 3, 4 and 17, Spagnoletti shows the first power cable is terminated at about a midpoint of the first of the first optical fiber and the length is less than the total length of the first optical fiber (col. 2. lines 36-39).

As claims 5, 15 (in figure 5), the +/- sign in the element 30 indicates the positive/negative voltage level and connection of the element. This indicates the first end of the first power cable is connected to a positive voltage supply, and, in turn, the second end is connected to the negative voltage supply. Such, the power cable is fed from one end.

As claim 6, figure 4 shows separated power cable is supplied by separated voltage supply. (col. 6, lines 13-17)

As claims 7 and 24, Spagnoletti shows the power range of the system (col. 5, lines 24-25).

As claim 8, Spagnoletti mentions the length of the optical fiber for communication (col. 1, line 60).

As claims 14, 22 and 25, Spagnoletti disclose the repeaters (30) (line units) comprising Raman amplifier (col. 5, lines 47-51)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 9-13 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spagnoletti (U.S. Pat. No. 6,496,626 B2) as applied to claims 1 and 16 above, in view of Aida et al. (Hereinafter "Aida") (U.S. Pat. No. 5,005,937).

As claims 9 and 18, Spagnoletti fails to teach an optical tap for monitoring optical signal quality of the optical signal propagating along the first optical fiber, wherein the optical tap is located at a site of power termination. However, Aida discloses an optical

divider (tap) (21, fig. 9), located at in branching element (44) for monitoring optical signal (col. 12, lines 54-66). Since both reference are related to wavelength multiplexed optical communication with the utilities of power cable (Spagnoletti, col. 1, lines 33-36 and Aida, col. 9, lines 16-18), therefore, it would have been obvious to one having ordinary skill in the art to associate an optical divider (tap) as taught by Aide into the system of Spagnoletti for monitoring optical signal. One would have motivated for doing this for making sure the level of the optical signal (that associated with amplifier) in order for supporting the subscriber-furnished terminal equipment in receiving program (col. 13, lines 6-14).

As claims 10 and 19, Aida also discloses amplifier (gain correction filter) (23, fig. 9) for adjusting a gain profile of the optical signal propagating along the first optical fiber (such as 30, fig. 9), wherein the amplifier is located at a cite of power termination (such as 44) (Aida, col. 12, lines 48-54).

As claims 11 and 20, Aida further discloses:

an add/drop multiplexer (47, fig. 7) (col. 1, lines 38-40),

wherein the add/drop multiplexer filters out at least one channel and fewer than all of the channels of the WDM optical signal propagating along the first optical fiber and inserts at least one other channel into the WDM optical signal propagating along the first optical fiber (col. 7, lines 26-38), and

wherein the add/drop multiplexer is located at a site of power termination (such as 44).

As claim 12, the system as a combination system of Spagnoletti and Aida as described above, further comprising:

- an optical termination (denoted 40₁, Aida, Fig. 6) positioned at a site of power termination (denoted 44₁); and

- a second optical fiber (denoted 36) positioned adjacent to the first optical fiber (denoted 35₁)

- wherein the optical termination (44₁) terminates the second optical fiber, and

- wherein the first optical fiber (35₁) is not terminated by the optical termination (such as 44) (fig. 6 and col. 8, lines 7-18).

As claims 13 and 21, the system as a combination system of Spagnoletti and Aida as described above, further comprising:

- An optical divider (splitter) (21₂, fig. 8) comprising:

- an input optically coupled to the first optical fiber (33₀);

- a first output optically coupled to a first optical branch path (such as branch through 23₁); and

- a second output optically coupled to a second optical branch path (such as branch through 23₂),

- wherein the optical splitter provides an optical signal received on the input to the first optical branch path and to the second optical branch path, and

- wherein the optical splitter is located at a site of power termination (such as 44₁) (col. 12, lines 5-21).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schesser et al. (U.S. Pat. No. 6,414,405 B1) is cited to show method and apparatus for operating cabled-fiber undersea network.

Yamaguchi (U.S. Pat. No. 6,163,084) is cited to show cable branching unit.

Hanynda et al. (U.S. Pat. No. 4,879,762) is cited to show optical repeater and regulated current feed system for the same.

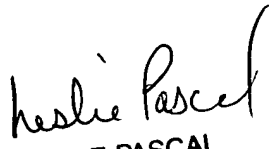
Endo et al. (U.S. Pat. No. 4,495,421) is cited to show optical power supply switching apparatus.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau M. Nguyen whose telephone number is 703-305-8965. The examiner can normally be reached on Mon-Fri from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4726. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

C.M.N.
Jul. 12, 2004


LESLIE PASCAL
PRIMARY EXAMINER